



Computer Telephony Solutions
From Prime CTI, Inc.

TABLE OF CONTENTS

- 1) THE BASICS OF COMPUTER TELEPHONY INTEGRATION (CTI)
- 2) WHY YOUR COMPANY SHOULD IMPLEMENT CTI SOLUTIONS
- 3) WHAT IS TAPI (TELEPHONY APPLICATION PROGRAMMING INTERFACE)
- 4) WHAT IS TSAPI (TELEPHONY SERVICES APPLICATION PROGRAMMING INTERFACE)
- 5) CTI LINK SOFTWARE
- 6) UTILIZING THE TELEPHONY CORE MODULE FOR OEM AND CUSTOM APPLICATIONS
- 7) FREQUENTLY ASKED QUESTIONS (FAQ)

1) THE BASICS OF COMPUTER TELEPHONY INTEGRATION (CTI)

Computer Telephony is an industry term for the integration of computer systems and telephones, also known as CTI. Computer Telephony became commercially available in the 1980s, as companies started using Voicemail, Fax-On-Demand, Interactive Voice Response (IVR), Automatic Call Distribution (ACD) Systems for inbound calls and Predictive Dialers for outbound telemarketing.

Today, most professionals use a workgroup database program to better manage their everyday activities and maintain their customer records. Contact Managers like ACT, GoldMine, TeleMagic and Microsoft Outlook are the top selling database programs. Some companies use programming tools like Microsoft Access to create their own custom database application.

Other than employees, the two most important and expensive tools that any company has, is their PBX phone system and computer network. The next logical step would be to integrate these tools for even greater productivity and return on investment. The ability to handle voice and data with a simple click of a mouse saves time and money.

Just a few years ago this type of integration was difficult to accomplish due to the proprietary nature of the phone systems and database programs. Thankfully today, there are the two industry standards for creating a physical connection between computers and telephones. The first is TAPI a Windows based desktop solution. A TAPI installation requires a small device that plugs into a serial port and a software driver called a TSP, the PBX manufacturer supplies both. TAPI is the "lower cost" solution for up to 25 CTI users.

TSAPI and TAPI 2.0 on the other hand, are network solutions that connect a Novell or Windows NT network to the PBX. Hardware and software requirements vary from PBX to PBX. TSAPI or TAPI 2.0 are typically the "lower cost" solutions where you would have more than 25 CTI users.

The key to establishing a successful CTI environment is PRIME's CTI Link software. CTI Link is a low cost 32-bit Computer Telephony middle-ware program that supports TAPI, TSAPI, Windows 95, Windows NT, Novell, and Windows based database applications. CTI Link utilizes OLE and DDE for seamless integration to many contact managers. Contact managers and PIMs require a middle-ware program like CTI Link to communicate with a TAPI or TSAPI compliant phone system.

2) WHY YOUR COMPANY SHOULD IMPLEMENT CTI SOLUTIONS

Much of your day is probably spent on the phone communicating with your customers, or trying to sell to prospective new customers. Maintaining accurate information on a customer or prospect is one of the key reasons companies spend so much money on computer systems. Besides your employees, most companies consider their customer database one of their most valuable assets.

Four short years ago, terms like, Computer Telephony, CTI, TAPI and TSAPI were virtually unknown. Today, on CNN / Headline News you can see commercials selling the benefits of CTI. The reason for the rapid growth of Computer Telephony, is the Return on Investment that users see after integrating their databases to their telephones.

When you implement CTI solutions like Prime's CTI Link Software, you will see a marked improvement in the speed and accuracy in handling communications with your customer. CTI Link will read the Caller-id of the incoming call and automatically screen-pop the caller's record in your database. All of this happens before your employee even answer the phone. Equally important is the ability to automatically place calls from your database with a simply click of the mouse.

From TechWire (4-15-97): "Call centers dominate today's CTI market. However, there will be as many seats of desktop CTI by 1999 as there are call center seats—around 5 million each," the report said. In 2002, there will be 29 million desktop seats—more than three times as many as call center seats, which are estimated to be at 9 million. " Said the report by British researcher Ovum.

3) WHAT IS TAPI (TELEPHONY APPLICATION PROGRAMMING INTERFACE)

The TAPI standard was created jointly by Microsoft and Intel. In a TAPI environment, the physical connection is made at the desktop level. This means the phone on your desk is connected to the PC on your desk. Even though the connection is on your desktop, your PC can be stand-alone or accessing data on a network file server.

PBX vendors manufacture the TAPI compliant hardware devices for their phone systems. The devices may be a small circuit board built into the phone set, a card installed in the PC, but most are external devices. An external device will have a cable that plugs into a serial port on the back of the PC. The device will also have two RJ-11 phone jacks, one is connected to the phone set and the other is plugged into the jack in the wall. These TAPI devices must be from the PBX vendor and must be the appropriate device for the particular PBX model your customer has.

For smaller companies that do not have a business phone system, they may still create a TAPI connection. TAPI devices such as the PATI 3000 are available for single analog phone lines. This external device is similar to the ones above; however, it's designed for use with a dedicated analog line instead of digital phone systems. An alternative would be a modem that supports the Unimodem TSP in Windows 95.

TSP (TAPI Service Provider)

The TSP is a software driver that is written by the PBX vendor for their TAPI device. The TSP basically lets other programs know what function sets of the TAPI standard the device uses. A CTI middle-ware program like PRIME's CTI Link software is still needed to make use of the CTI connection. The TSP is a vital part of a successful CTI installation. Unfortunately many PBX vendors ship several programs with their TAPI devices. These programs will include the TSP as well as other communications programs. These other communications programs will not integrate to your contact manager with DDE. The only software needed is the TSP.

4) WHAT IS TSAPI (TELEPHONY SERVICES APPLICATION PROGRAMMING INTERFACE)

The TSAPI standard was created by AT&T (Lucent) and Novell. In a TSAPI environment the PBX is physically connected to the File Server on the PC network. In some cases the PBX may be connected to a separate Telephony Server on the network.

The hardware and software required for a TSAPI configuration is supplied by the PBX vendor. Initially the cost of TSAPI can be higher, but for installations of 25-30 CTI users, TSAPI can be the lowest cost per user solution. When the TSAPI software is configured, each CTI user's phone extension number is associated with their node address on the network.

The key to establishing a successful CTI environment is PRIME's CTI Link software. CTI Link is a low cost 32-bit Computer Telephony middle-ware program that supports TAPI, TSAPI, Windows 95, Windows NT, Novell, and Windows based database applications. CTI Link utilizes OLE and DDE for seamless integration to many contact managers. Contact managers and PIMs require a middle-ware program like CTI Link to communicate with a TAPI or TSAPI compliant phone system.

5) CTI LINK SOFTWARE



This user friendly, middle-to easily connect their their telephone systems for productivity in handling communications with customers.

ware program allows companies computer database programs to greater speed, accuracy and

CTI Link is a low cost 32-bit Computer Telephony middle-ware program that enables Windows based Contact Managers, PIMs or other database programs to interface with business phone systems such as PBXs and Key systems. The phone system needs to be compliant with one of the two industry standards for Computer Telephony, TAPI or TSAPI. An alternative would be a modem that supports the Unimodem TSP (TAPI Service Provider) in Windows 95.

CTI Link's new Installation Wizard greatly simplifies the integration process. Once in place, CTI Link allows for automatic screen-pop of the appropriate database record based on Caller-ID, ANI or DNIS information. Outbound calls are automatically launched by a simple click of the mouse. CTI Link supports Unified Messaging as well. Computer Telephony Integration has never been this easy or this affordable.

CTI Link is a true 32-bit software program and is the 3rd generation in a series of CTI middle-ware programs written by Mr. Thomas Drake, V.P. of Technical Services for Prime CTI. CTI Link's predecessor (a 16-bit program) has been certified and marketed by such companies as Lucent, Inter-Tel, Nortel, Comdial and TeleMagic.

Prime's software family, CTI Link, Call Block and CTI Pager all use the same telephony module. This module reduces the combined complexities of TAPI and TSAPI into one relatively small group of function calls that encompass all telephony functionality. What this means in terms of product reliability, is that as these products and others are tested and used in the real world, any adjustments or enhancements made to one product benefits the others as well. This also allows Prime to offer custom programming services that can be accomplished in a fraction of the time and expense of conventional software development. CTI Link currently supports TAPI, TSAPI, Windows 95, Windows NT, Novell, and Microsoft's Office 97. There are separate interface modules for other contact managers such as TeleMagic, GoldMine and ACT.

6) UTILIZING THE TELEPHONY CORE MODULE FOR OEM AND CUSTOM APPLICATIONS

If you are an OEM or an End-user who's CTI requirements go beyond the capabilities of standardized shrink- wrapped programs, Prime CTI offers custom programming services. Successful CTI programming requires special skills, knowledge of different phone systems and telephony functions. Prime's programming staff has the expertise and experience to meet your most challenging requirements.

A full-blown custom program may not required, often we are able to use our "telephony core module" and simply tailor a solution for the customer. Prime's entire family of software programs utilize this "telephony core module". This module reduces the combined complexities of TAPI and TSAPI into one relatively small group of function calls that encompass all telephony functionality. Using this module allows Prime to offer custom programming services that can be implemented in a fraction of the time and expense of conventional software development.

7) FREQUENTLY ASKED QUESTIONS (FAQ)

Frequently Asked Questions re: CTI Link

Q) Will CTI Link work with my company's phone system or PBX?

A) Yes, provided your phone systems can support TAPI or TSAPI.

Q) What is the difference between TAPI and TSAPI and which do I choose?

A) TAPI is a Windows based desktop solution, it requires a direct connect device (between the PC and telephone) and a software driver. Typical TAPI installations are 25 users or less. TSAPI on the other hand, is a network solution that connects a Novell or Windows NT network to the PBX. Typical TSAPI installations have more than 25 users.

Q) What database programs will CTI Link work with?

A) CTI Link utilizes OLE to seamlessly integrate to Microsoft Outlook and Dynamic Data Exchange (DDE) for ACT, GoldMine and TeleMagic. Custom programming is available for integration to other Windows based programs.

Q) Is CTI Link a Network or Stand-alone desktop solution?

A) BOTH. CTI Link, like TAPI, is a desktop application, installed on each PC, whether that PC is stand-alone or a network node. Your database can be local to the PC or you can access the database records on the network drive.

Q) Will CTI Link work with my custom Windows database?

A) Yes. PRIME CTI offers customized DDE and OLE programming.

Q) My TAPI device has screen-pop software, Why do I need CTI Link?

A) There are many limitations to the caller-id screen-pop software that comes with some TAPI devices. They only work with their own simple little PIM (personal Information Manager). Most companies use commercial databases like ACT, GoldMine, Microsoft Outlook or TeleMagic. You need CTI Link to integrate to these applications.

Frequently Asked Questions re: CTI Call Block

Q) Why is blocking calls to the "Do Not Call" restricted phone numbers so important?

A) New Federal laws forbid Telemarketers from calling any consumer who has previously stated that they do not wish to receive such calls. Some States and private citizens groups have compiled restricted lists.

Q) I only call "Business to Business" Do I need CTI Call Block?

A) The Federal Telemarketing Laws do not regulate business to business calls, however many companies like this feature for two reasons. First, most companies don't want to make cold calls to existing customers by mistake. Second, its good business not to call on people who ask you not to, business or consumer.

FREQUENTLY ASKED QUESTIONS (FAQ)

What is a Real Question? (RTQ)

RTQs are questions that can be answered by a single, specific, and measurable fact or figure. They are the foundation of a good research paper.

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CTILink version 5

Table of Contents

1)	System Requirements	page 2
2)	What is CTILink?	page 2
3)	Installing CTILink Software	page 3
4)	Connecting to the phone system	page 4
5)	Setting up TAPI	page 4
6)	Setting up TSAPI	page 4
7)	Setting up PhoneWare	page 5
8)	The Connection Button	page 5
9)	The Dialer dialog	page 6
10)	Dialing properties	page 6
11)	Edit Speed Button dialog	page 6
12)	Phone Search Ranges	page 7
13)	Setting up Outlook	page 7
14)	Using the CTILink Contact Record in Outlook	page 8
15)	Using the CTILink Power Dialer in Outlook	page 8
16)	Setting up TeleMagic	page 9
17)	Using TeleMagic with CTILink	page 10
18)	Registering CTILink	page 10
19)	License and Warranty	page 10
20)	Technical Support	page 11

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1) System Requirements

- Pentium level PC with 32+ MB RAM
- Operating System: Windows 95, Windows 98 or Windows NT Ver 4.00 or greater.
- Contact Management Software: Outlook 98, Outlook 2000 or TeleMagic Ver 3.5c
- Phone System: TAPI v 1.3 or greater, TSAPI v 2.0 or greater, and PhoneWare v3.1 or greater.

2) What is CTILink?

CTILink is a 32-bit program that brings full-featured Computer Telephony Integration to the PC. Using state of the art Windows technology including COM and ActiveX controls, contact managers, database programs and other applications have access to CTI without having to understand the technical details.

Benefits that CTILink provides:

- On screen control of telephony features: Numbers are dialed, calls answered and disconnected, lines held and released and third party control including consultation calling, conferencing and transfer are all accomplished with the click of a mouse.
- Choice of phone services: Whether the phone service of TAPI, TSAPI or PhoneWare, the features and functionality remain the same.
- Tight integration to Microsoft Outlook and TeleMagic: CTILink fully telephony enables these highly configurable contact managers. Simply clicking on an icon from within a contact record dials the number over the PBX. When a call arrives, the appropriate contact record is displayed and can be answered directly from the contact manager.
- Integration to custom applications: Using COM, custom applications written in C, C++, Pascal, Visual Basic and Visual Basic for Applications can automate CTILink to place calls and receive inbound call information such as Caller ID, ANI and DNIS. CTILink maintains all telephony states allowing the custom applications to provide sophisticated call control with incredible ease. All the Microsoft Office applications including Access, Excel, Word, Outlook and Power Point can incorporate the CTILink ActiveX Phone Bar directly into their forms.
- Phone search ranges: Many times, the caller number from arriving calls is different depending on which extension the number was dialed from. This causes a problem when looking up numbers because all the numbers actually reference one lookup number. CTILink provides the ability to map all numbers from a source to one lookup number.
- North American Numbering Plan: In many areas, some area codes must be dialed as local and within a local area code, some prefixes must be dialed as long distance. CTILink provides the ability to create rules so that all numbers are dialed correctly.
- Power dialing from Outlook: A custom contact form and directory in Outlook provide the sales organization with the means to automatically dial the next number in a list as soon as the current call is disconnected. The source code is viewable and fully modifiable within the Outlook form allowing the user to enhance or modify the functionality.

3) Installing CTILink Software

CTILink can be installed either on each desktop PC or you can install it on the network drive. For smaller number of users it may be easier to install CTILink on the PC's local drive (C:\). For multiple user sites, it will be easier to install CTILink on the network drive and create shortcuts for each of the users. When installed on a network drive, CTILink will generate only one "Computer ID Number". One unlock code will be generated for the appropriate number of users. When you want to add additional users, a new unlock code will increase the number of users.

Single user installation

- Place disk 1 in the floppy disk drive
- Click on the "Start" button and then "Run", in the dialog box type A:\Setup.exe
- Follow the CTILink InstallShield Wizard Setup program

Network Installation

- Installation: You should install CTILink from one of the network workstations, logged in as the System Administrator. As CTILink's InstallShield Wizard starts the setup, watch for the Destination Screen. The first screen is "Welcome", next is "Software License Agreement" and then "User Info". The fourth screen is the "Choose Destination Location". Caution, the default path is: C:\Program Files\CTI Software\CTILink
- Click on the "Browse" button, a "Choose Directory" dialog box will open. Select the appropriate network drive and type in a directory name such as "CTILink" under "Path:". It should read something like F:\CTILink. Click on "OK" and proceed with the installation.
- Registration: Once installed, open CTILink (still logged in as System Administrator). The CTILink Registration Screen will appear. CTILink installed on a network drive will generate one "Computer ID Number". Email that number to register@primecti.com for a registration number and an unlock code that will establish the correct number of licensed users.
- Once you have submitted your request for unlock codes, CTILink will allow you to continue your setup. Any time the Registration Screen pops up, simply click on the "Continue" button when it becomes active and proceed. Upon receipt of your unlock code and registration number from Prime CTI, simply click on Options/Help/Register and plug the codes in and click on "Unlock".
- Global Settings: Open CTILink (still logged in as System Administrator). The CTILink Toolbar will appear. On the toolbar the only active menu items will be "Options" and "Minimize". The other items will remain greyed out until you have selected the phone service (TAPI or TSAPI) and the client application.
- With CTILink open, select "Options" and click on "Global Setting Password". The default password is "CTI" all in caps. You can now establish the phone service that all you agents will use. From their own workstations, individual users will be able to change their own local phone service, but the default for all other users will be whatever the system administrator sets up globally. To set up the global settings for phone service, follow the procedures starting in section 4.
- Creating the Shortcuts: Once CTILink is set up on the network drive, you will need to create shortcuts to each workstation. From each PC log in as the user and double click on "My Computer". Now double click on the network drive that CTILink is installed on. Next double click on the directory that CTILink is in. Finally, click on `ctilink.exe` and drag it over to the user's desktop (caution: DO NOT click and drag the `tmlink.exe`). Your desktop shortcut to CTILink is now established.
- Important note: Even if each user will use the default phone service settings, they will need to select the phone device(s) they will use.

4) Connecting to the phone system

First select: Options - Phone Service - Properties to display a menu list of the phone systems available. These include:

TAPI
TSAPI
PhoneWare

5) Setting up TAPI

Setting up TAPI in windows:

- Click Start - Settings - Control - Panel from the windows task bar.
- Double click on the Telephony icon. (If the icon is not there, TAPI must be installed.)
- In the Dialing Properties dialog select the Telephony Drivers tab.
- The name of the telephony driver for the modem or PBX should be displayed. If it is not, click Add to display the Add Driver dialog. Select the correct driver from the list displayed or select Unlisted or Updated Driver and click Add again. (If a modem is being used for the telephone system and telephony driver software is not available, select Unimodem Service Provider.)
- Select Setup to configure the telephony driver.

Setting up TAPI in CTILink:

- Click Options - Phone Service - Properties - TAPI from CTILink to display the Properties Wizard dialog.
- Select and configure the desired phone devices.
- Check Open Phone Service to open the phone service when finished with the Properties Wizard
- Check Open the phone service when starting to have CTILink automatically start the phone service each time it runs.
- Checking CTILink dialing properties cause CTILink to use its own dialing properties dialog instead of the default provided by TAPI. If you are using Windows 98 this option should remain unchecked because the same functionality is provided by both. In Windows 95 and Windows NT the dialing properties provided by TAPI do not include provisions for establishing rules about how specific numbers should be dialed as local or long distance numbers and if these features are needed, this option should be checked.
- Click Finished.

6) Setting up TSAPI

- Click Options - Phone Service - Properties - TSAPI from CTILink to display the Properties Wizard dialog.
- In the Login ID edit box enter the TSAPI login identifier which can be obtained from the network administrator. (The TSAPI login is not the same as the network login.)
- In the Password edit box enter the TSAPI password. (The TSAPI password is not the same as the network password.)
- If there is more than one TSAPI Server, select the one you wish to connect to and then click Next.
- Select and configure the desired phone devices.
- Check Open Phone Service to open the phone service when finished with the Properties Wizard
- Check Open the phone service when starting to have CTILink automatically start the phone service each time it runs.
- Click Finished.

7) Setting up PhoneWare

Setting up PhoneWare extensions and TCP/IP parameters:

- Click Options - Phone Service - Properties - PhoneWare - Setup to display the PhoneWare Properties dialog.
- Add the extension number for all the phones in the PhoneWare system (one on each line) in the Extensions list.
- In the TCP/IP Host edit box enter the IP address of the network server where the PhoneWare server is installed. The system administrator or telephone vendor will have this address.
- In the TCP/IP Port edit box enter the Port number for the PhoneWare server. Unless directed by the system administrator or telephone vendor this number should be 601.
- Click OK to dismiss the dialog box.

Configuring PhoneWare:

- Click Options - Phone Service - Properties - PhoneWare - Configure to display the Properties Wizard.
- Select and configure the desired phone devices.
- Check Open Phone Service to open the phone service when finished with the Properties Wizard
- Check Open the phone service when starting to have CTLink automatically start the phone service each time it runs.
- Click Finished.

8) The Connection Button

The connection button is on the left side of the phone bar and is used to Dial, Answer and Hang-up the phone. Associated with the connection button is a dropdown menu that is accessed by clicking on the downward pointing arrow on the button. With the exception of setting options, all telephone functionality can be implemented with this button and its menu.

The caption of the button and the contents of the menu change depending on the state of the connection which can be one of the following:

- Idle: There is no active connection and the phone is on-hook. Clicking on the button displays the dialer dialog
- Initiating: the phone is ringing at the destination but a connection has not been established. Clicking on the button places the phone on-hook.
- Alerting: The phone is ringing locally but a connection has not been established. Clicking on the button takes the phone off-hook and establishes a connection.
- Established: A connection has been established. Clicking on the button places the phone on-hook
- On Hold: The connection is on hold. Clicking on the button displays the dialer dialog.
- Fail: The connection failed to establish; usually, because the line is busy.
- Other: The connection is in an intermediate state such as on hold pending a conference.

The phone numbers that are displayed in the connection menu are the numbers that are in the currently active client application form. If there is no active form or there is no client application, the numbers are from the speed dialer numbers on the dialer dialog.

If a command is not enabled it is because the current phone state does not support the command or the phone system does not support the command.

9) The Dialer dialog

To dial, enter the number in the Number edit box and optionally fill in a name and extension. Filling in the name will allow it to be included in the connection menu and on the title bar of the phone bar. Filling in the extension will cause the extension edit box to be pre-filled.

Click on a telephone icon to enter information for a speed dial entry. Once entered, the icon is enabled and clicking on it will dial the number entered. To edit an active speed dial entry, right click on the icon or click the Edit Speed button.

Speed dial entries will be displayed in the Connection Button drop-down menu if no active client application is present.

Keyboard shortcuts:

- Alt + 0 through 9 dials the corresponding speed button number.
- Alt + U sets the focus on the Number edit box.
- Alt + A sets the focus on the Name edit box.
- Alt + X sets the focus on the Extension edit box.
- Alt + D or pressing Enter when in the Number edit box dials the number.
- Alt + S displays Edit Speed Button dialog.
- Alt + P displays the Dialing Properties dialog.
- Alt + O or ESC dismisses the Dialer dialog.

10) Dialing Properties

Dialing properties control how a telephone number is dialed. The Dialing Properties dialog can be displayed by clicking the Dialing Properties button from the Dialer dialog or Edit Speed Button dialog or when Configuring phone devices.

To set up dialing properties for a phone number, click Dial from the phone bar, enter a phone number and then click Dialing Properties. If the computer is a portable that can be moved from location to location, the New... button can be used to change the dialing parameters to correspond to each new location. The Area Code Rules... button displays the Area Code Rules dialog that allows setting up the North American Dialing Plan rules.

If you are unsure about how a particular parameter will effect the dialed number, the Number to be dialed: changes to show exactly what will be dialed whenever a parameter is changed.

11) Edit Speed Button dialog

To display the dialog, click on Dial from the Phone bar to display the Dialer dialog. Right click on one of the phone icons or click on Edit Speed button. Enter a number, name and, if needed, an extension. Click Dialing Properties to display the Dialing Properties dialog for the phone number. Click Clear All Data to disable the speed button.

Clicking on an enabled speed dial icon will cause the number to be dialed. Also, the speed dial numbers will be displayed in the Connection Button drop down menu when the phone is idle and a client application record is not active.

12) Phone Search Ranges

Phone search ranges allow incoming calls that fall between two values to be searched using only one number. This situation often occurs when being called from larger offices.

Click Options - Search Ranges... to display the Define Phone Search Range dialog.

In the example below, any number between 561-832-3801 and 561-832-3810 will be searched for using 561-832-3800.

13) Setting up Outlook

Modifying Outlook:

It is not necessary to modify Outlook if a screen pop is the only feature being used from CTILink. However, in order to dial out and perform power dialing, the Telephony Services folder should be installed.

- * In Outlook 98, select File - Open - Personal Folders File (.pst)...
Navigate to the CTILink folder, by default, c:\program files\cti software\ctilink and select Telephony Services.pst.

The service is now installed. It can be removed at any time by selecting Tool - Services... highlight Telephony Services and click Remove.

Before modifying CTILink, it is a good idea to create a CTILink Contact record and add a phone number so that a number lookup test can be performed.

- * In Outlook select Go - Go to Folder....
Highlight CTILink Contacts under the Telephony Services folder. Click OK.
Double click on the edit box that says Click here to add a new Contact to create a new CTI Contact record.
Add a name and at least one phone number and then Save and Close the contact record.

Modifying CTILink:

In CTILink select Options - Client Application - Outlook.

In the Outlook Properties dialog check Link to Outlook.

- * Click Choose folder... and highlight CTILink Contacts under the Telephony Services folder. Click OK.
If you live in the United State then the default Phone number lookup format is probably correct. However, if you save phone numbers in a different format you may need to modify and or add additional format strings. Follow the directions printed on the dialog box.
Click Lookup Nbr and enter a phone number (do not forget the area code) that is in an Outlook CTI Contact record and verify that Outlook displays the correct contact record.
Click OK to dismiss the Outlook Properties dialog box.

14) Using the CTILink Contact Record in Outlook

The CTILink contact record is the same as the standard contact record except that a phone bar control has replaced two of the phone fields and an extensions page has been added.

To dial, click on the downward pointing arrow next to the Dial button and a list of all the numbers in the contact record will be displayed in a drop-down menu. Click on the desired number.

When a call is received a CTILink contact record is displayed and the Dial caption changes to Answer. Click on it to answer the phone.

To add an extension number, click on the extensions tab and fill in the appropriate edit box.

15) Using the CTILink Power Dialer in Outlook

A power dialer is used to dial a list of phone numbers automatically. As soon as one call is completed the next number on the list is automatically dialed.

- To get to the power dialer in Outlook click Go - Go to Folder.
- Highlight Power Dialer under Telephony Services.
- Click OK.

To use the power dialer:

- Create power dialer contacts and fill in the name and number and if needed the extension.
- To begin power dialing, double click on the top contact to view the contact.
- Check the Enable Power Dialing check box.
- When done with the call, check one of the Call Result radio buttons. The phone goes "on hook" and the current contact form is moved to the corresponding Power Dialer sub-folder and the next contact record is displayed with the number automatically dialed.
- To stop power dialing, uncheck Enable Power Dialing before selecting the Call Result radio button.

16) Setting up TeleMagic

Before attempting to configure CTILink to work with TeleMagic make sure TeleMagic is already running. You must be running Version 3.5 or later.

Configuring TeleMagic:

Formatting the phone fields:

- * Click File - Add/Edit Fields...
 - Highlight a phone field that CTILink should search.
 - Click Change.
 - Click Template.
 - It is preferable to use either Default US Phone or Default Intl Phone, but a user-defined format can be used. What is important is that every phone field has the same format.
 - Click OK to dismiss the Phone Template dialog.
 - Click Save Field to save the format.
 - Repeat the above procedure for every phone field to be searched. (CTILink searches both Level 1 and Level 2).

Defining the search indexes:

For every phone field there must be a corresponding index, which can be created as follows:

- * Click Contact - Contact Utilities - Edit Indexes...
 - To create an index corresponding to one of the phone fields, Click Add. Note, there is already a default index named TelePhone # which references the Main Phone, so it is not necessary to add it.
 - Select the level to index.
 - In the Index Name edit field enter a descriptive name for the index.
 - Leave the Index Filter set to None.
 - Click the Edit button,
 - Highlight the field to be indexed and click Select.
 - Click OK.
 - Leave all the check boxes unchecked and click OK.
 - Repeat the above steps for every phone field to be searched.
 - Click Build Indexes.
 - Click Close.

Configuring CTILink:

- In CTILink click Options - Client Applications - TeleMagic.
- Check Link to TeleMagic.
- Click Edit Indexes.
- Highlight the index names that were defined in defining the search indexes above.
- Click OK.
- To test your work, click Test Lookup. Enter a number that is in one of the select indexed fields. Don't forget the area code. Click OK and the TeleMagic record should display.
- If the above test did not work, click Set Lookup Format. Enter a phone number as it appears in TeleMagic, substituting an X for each digit. For example, if a number appears as 561-832-3801 in TeleMagic type XXX-XXX-XXXX. Repeat the lookup test.

If the lookup still does not work, go over the configuration of TeleMagic and check that every field is formatted the same and that every field has an index defined for it and that it is selected in CTILink.

The View DDE button displays a history of all Dynamic Data Exchange conversations between CTILink and TeleMagic and is used for trouble shooting purposes.

17) Using TeleMagic with CTILink

The best way to dial from TeleMagic is to click the telephone icon next to the phone number to be dialed. CTILink dials the number and if so configured in TeleMagic the Call Notes dialog displays. Click Terminate to end the call. Notice that the duration of the call is filled in.

Another way to dial is to click on the Dial button in the upper right hand corner. This causes CTILink to display with the connection menu showing all the phone numbers in the TeleMagic contact record. The problem with this method is that the call cannot be terminated from TeleMagic and no call notes with the call duration is created.

When an incoming call is received, CTILink will cause TeleMagic to search for the incoming number and, if found, display the corresponding record. The call can be answered by clicking the answer speed button in TeleMagic. If the number is not found or TeleMagic is in the edit mode the record will not be displayed.

18) Registering CTILink

To display the Registration dialog click Options - Help - Register.

The Computer ID Number is a number that uniquely identifies the computer on which the program is installed. To register, the Unlock Code and Registration Number edit fields should be completed and the Unlock button clicked. These numbers are supplied when the Computer ID Number and payment are submitted via the following methods:

- Email: Send an email to register@primecti.com. In the subject enter the word register and in the body include the Computer ID Number, your name and number and the best time to be contacted for your credit card information. At that time you will be supplied with the Unlock Code and Registration Number. To have the email prepared automatically, enter the User Information and For credit card information call me at fields; then click on the Email tab and choose the Email type and click Send an email for me.
- If you DO NOT have access to email, please call Prime CTI, Inc. at (561) 433-2946 and have your Computer ID Number and credit card information available.

19) License and Warranty

License Agreement

Please read the following terms and conditions carefully before using this software. Your use of this software indicates your acceptance of this license agreement and warranty. This License Agreement grants you the right to use a registered copy of CTILink software on an individual computer. It is licensed per computer and not per user. A license is required for every computer that the software is installed on whether it is stand-alone or a member of a network.

Disclaimer of Warranty

THIS SOFTWARE AND THE ACCOMPANYING FILES ARE SOLD "AS IS" AND WITHOUT WARRANTIES AS TO PERFORMANCE OR MERCHANTABILITY OR ANY OTHER WARRANTIES WHETHER EXPRESSED OR IMPLIED. Because of the various hardware and software environments into which the software may be used, NO WARRANTY OF FITNESS FOR A PARTICULAR PURPOSE IS OFFERED.

20) Technical Support

CTILink version 5.0 is the result of more than 6 years of research and development within the Computer Telephony industry. CTILink v5.0 is the 4th generation of CTI middleware created by the developer. Version 5.0 is by far the most reliable application to date. CTILink comes with 30 days of technical support via email at support@primecti.com.

Most technical issues arise during the implementation of CTI. It can be somewhat complicated when you bring together multiple hardware and software platforms. This is why Prime CTI, Inc. strongly recommends the optional (fee based) technical telephone support during the install and setup of a new CTI environment. Prime CTI also offers annual support programs for CTILink customers. Please contact your local Reseller for more information.

Should you require technical support, please contact your Prime CTI Reseller. He or she can often answer your questions directly. Should they need assistance from Prime's technicians, they will contact them via email. Anytime contact is made with the Prime's tech support, please provide as much detailed information on the PC and Phone environment as possible. In addition, they will require a copy of the "phone events" and "error Log" from CTILink to be emailed as well.

The first part of the report is a general introduction to the subject of the report. It is followed by a description of the methods used in the study. The third part of the report is a discussion of the results of the study. The fourth part of the report is a conclusion. The fifth part of the report is a list of references.

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